

Remarks

In the Office Action, the Examiner objected to the specification for missing patent numbers. The amendments to the specification above add the missing patent numbers.

In the Office Action, the Examiner rejected claims 18-24, 26, 28-34, 36 and 39 pursuant to 35 U.S.C. §103(a) as being unpatentable over Saito et al. (JP 11-078656) (using Saito et al. U.S. Patent No. 6,208,249 as a translation) in view of Sakai et al. (U.S. Patent No. 6,253,133) and further in view of Weib (DE 198 26 391). Claims 25 and 35 were rejected pursuant to 35 U.S.C. §103(a) as being unpatentable over Saito et al. in view of Sakai et al. and further in view of Weib and Okamura et al. (U.S. Patent No. 6,490,515). Claims 27, 37, 40-55 and 57-59 were rejected pursuant to 35 U.S.C. §103(a) as being unpatentable over Saito et al. in view of Sakai et al. and further in view of Weib and Ekman et al. (U.S. Patent No. 5,927,817). Applicants respectfully request reconsideration of the rejections of the claims 18-37, 39-55 and 57-59, including independent claims 18, 28, 39, 40, 49 and 55.

Independent claim 18 claims a moisture resistant cover adjacent a sensor operable to transmit energy into a seating area. Independent claim 28 claims covering a sensor with a moisture resistant cover and transmitting energy from the sensor into a seating area.

Independent claim 39 claims a moisture resistant cover over a sensor.

A person of ordinary skill in the art would not have placed “the moisture resistant cover adjacent to the sensor of Saito in order to enhance accuracy in detecting the passenger position as suggested by the combined teaching of Sakai and Weib.” First, Sakai et al. notes the effect of humidity (col. 10, lines 37-43), not moisture. Humidity is wetness of the atmosphere or air. A moisture cover would not alter performance of a transmitting sensor responsive to humidity. Accordingly, the motivation to combine the teachings of Sakai et al. and Weib suggested by the Examiner is not provided. Second, Sakai et al. propose a solution to the humidity variation – altering the thresholds based on the humidity (col. 11, lines 7-16). Given the humidity concern of Sakai et al., a person of ordinary skill in the art would have used the adjustment of thresholds suggested by Sakai et al., not a moisture cover over a sensor. Third, Weib teaches away from using sensors that rely on transmitted energy, so a person of ordinary skill in the art would not have used the water repellent textile integrated as

part of the sensor of Weib with the transmitting sensor of Saito et al. Weib teaches that sensors relying on transmitted energy are undesired (page 1, line 15-page 2, line 5). Saito et al. uses such transmitted energy devices (col. 11, lines 38-57) and teaches that the pressure or weight sensing used by Weib is undesired (col. 2, lines 12-22). Since the water repellant textile of Weib is integrated with the sensor (page 3, lines 13-17), a person of ordinary skill would not have used the water repellant textile or film of Weib with the sensor of Saito et al. given the contrary teachings. For any of the three reasons discussed above, claims 18, 28 and 39 are allowable over the references cited by the Examiner.

Independent claim 40 claims “at least one aperture in the seat cushion adjacent to the occupant detection sensor, the at least one aperture positioned on an upper surface of the seat cushion, upper corresponding to a position of the seat cushion in use in a vehicle seat.”

Independent claim 49 claims “forming at least one drain in the seat cushion adjacent the occupant detection sensor, the at least one drain positioned at a low point of the seat cushion, low corresponding to a position of the seat cushion in use in a vehicle seat.” Independent claim 55 claims “a vehicle seat having an insulator, the insulator having at least one drain . . . wherein the at least one drain is positioned at a low point of an upper surface of the insulator, low and upper corresponding to a position of the insulator in the vehicle seat.”

The Examiner relies in part on the rejection of claim 18 above for rejecting claims 40, 49 and 55. As discussed above, claim 18 is allowable, so claims 40, 49 and 55 are allowable for the same reasons.

A person of ordinary skill in the art would not have opened “an aperture at the low point of the cushion near the sensor of Saito in order to facilitate quick draining of liquid to prevent soaking of water to the sensor” given the teachings of Ekman et al. First, the motivation relied on for Sakai et al. is for humidity, not liquid on the seat, so there is no motivation to provide an aperture or drain in the cushion. Second, the aperture of Ekman et al. allows air flow from a fan 38 through a channel 42 to the aperture 50 (col. 3, lines 58-60). The aperture 50 provides a route to an electronic device, so a person of ordinary skill in the art would not have used the aperture teaching of Ekman et al. to form a drain. Similarly, there is no motivation to use any aperture near an occupant sensor. Fourth, Weib suggest use of a water repellant textile, removing the motivation cited by the Examiner to remove liquid

to prevent soaking. A person of ordinary skill in the art would not have used the air flow aperture of Ekman et al. to provide an aperture or drain adjacent to an occupant sensor.

Claims 49 and 55 claim a drain. The aperture 50 of Ekman et al. is part of an air channel for a fan that includes a long horizontal section 42 with various dips and hills. Such an aperture would collect liquid, leading to mold and/or undesired odors. Ekman et al. do not disclose a drain as claimed by claims 49 and 55.

Dependent claims 19-27, 29-37, 41-48, 50-54 and 57-59 depend from the independent claims discussed above, so are allowable for the same reasons. Further limitations are allowable over the art relied on by the Examiner.

Claims 21 and 31 claim a plastic cover or covering in plastic. Weib shows a textile or film, not plastic.

Claims 25 and 35 claim a moisture sensor adjacent to or on a side of the occupant detection sensor. Okamura et al. use two sensors to make conclusions or determine states of occupancy (col. 12, lines 12-17). A person or object is not on the seat if both sensors do not detect something (col. 12, lines 18-28). Where the pressure sensor does not detect something but the dielectric sensor does, the seat is determined as wet though vacant (col. 12, lines 28-35). Okamura et al. use two different occupant detection sensors where disagreement indicates a problem, such as moisture, so do not suggest a moisture sensor adjacent to an occupant detection sensor.

Claims 26 and 36 claim covering part of a soft insulator. Weib disclose the sensor with the water repellant textile as being installed at a lower point in the seat while a heater is adjacent the surface. Weib position the sensor and water repellant textile away from the top of the foam, so do not cover part of the foam with the water repellant textile.

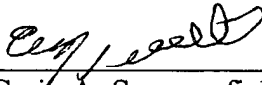
Claims 42 and 50 claim positioning the aperture or drain at a low point. Since the aperture of Ekman et al. is for air flow, it would not have been obvious to position the aperture at the low point as opposed to a point leading to the most comfort for the occupant, such as location centered with respect to the area of occupant contact with the seat.

Claims 43, 44 and 51 claim a plurality of or at least two apertures. Ekman et al. provide a single aperture in the cushion for air flow, not a plurality of apertures.

Claim 48 claims an aperture through the seat cushion, allowing fluid to drain. As discussed above, Ekman et al. provide a mostly horizontal path that may not allow fluid to drain.

Applicants respectfully submit that all of the pending claims are in condition for allowance and seeks early allowance thereof. If for any reason, the Examiner is unable to allow the application in the next Office Action and believes that an interview would be helpful to resolve any remaining issues, he is respectfully requested to contact the undersigned attorneys at (312) 321-4200.

Respectfully submitted,



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